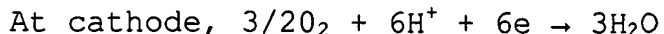
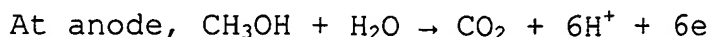


this acknowledgement is inappropriate due to the following reasons.

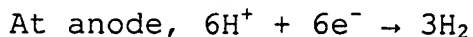
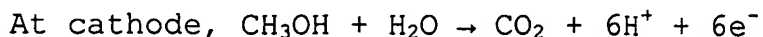
"A methanol fuel cell" of Cropley et al. generates electricity by producing the following reactions as shown in Fig. 1, and is used as a fuel cell (DMFC).



Also, as shown in Fig. 1, H does not become H₂ gas. H is involved in the above-mentioned reactions by moving through a partition membrane as H⁺. In the case of considering the usage as the fuel cell (DMFC), if H⁺ becomes H₂ gas, it follows that the above-mentioned reactions would not take place. Accordingly, it may be said that it is based on the assumption that the reaction of producing H₂ gas wherein H⁺ is consumed, would not take place.

Conversely, the present invention of claim 13 generates electricity due to the above-mentioned reactions, and at the same time, generates hydrogen so as to be "a hydrogen generating system".

In claim 13, the oxygen supply is reduced so that the voltage between the fuel electrode and the oxidizing electrode is adjusted to 200-600 mV. However, as previously mentioned repeatedly, in the present invention, it was found that the following reactions which completely differ from the above-mentioned reactions take place, and that hydrogen is generated at anode so as to be "a hydrogen generating system".



Therefore, in claim 13, it is important to provide "means for collecting hydrogen-containing gas" for anode (fuel electrode) in order to provide "a hydrogen generating system".

In the present Office Action, it was held that "Cropley teaches that there is a means for collecting (discharging)

methanol, water, carbon dioxide (see column 7, lines 25-35). This means is located at the anode (fuel electrode) side of the fuel cell and thus would be capable of collecting hydrogen if it was generated on this electrode.", "Therefore, it is a functionally equivalent means to that of the instant claim." However, this opinion is inappropriate.

The point of the invention of claim 13 is that hydrogen can be generated at anode. Since Cropley et al. does not disclose that hydrogen is generated at anode, "collecting hydrogen" cannot be made.

Also, in Cropley et al., due to the above-mentioned reactions, CO_2 (carbon dioxide) is generated at anode, and CH_3OH (methanol) and H_2O (water) which are raw materials, remain, so that in order to discard or circulate them, "a means for collecting methanol, water, carbon dioxide" is provided. However, it is irrational to say that since methanol, water, and carbon dioxide can be collected, hydrogen can be collected even though Cropley et al. does not disclose that hydrogen is generated at anode.

Also, it can be said that "a means for collecting" differs if materials to be collected differ, so that even if hydrogen is generated in Cropley et al., there is a significant difference between that "methanol, water, and carbon dioxide" which are unreacted reactants or wastes are collected in order to be used as the DMFC, and that "hydrogen" which is a product is collected in order to be used as "a hydrogen generating system". Therefore, it cannot be said that "a means for collecting" of claim 13 and Cropley et al. is "a functionally equivalent means".

The same can be said for claim 14.

Although Cropley et al. discloses that H_2 gas is generated at cathode (see column 15, lines 24-35), according to the description, H_2 gas is generated in the above-mentioned formulas instead of generating H_2O (water) by supplying e^- (applying an electric current) from outside without supplying oxygen to cathode, so that reaction formulas will be as follows.

At cathode, $H^+ + 6e^- \rightarrow 3H_2$

At anode, $CH_3OH + H_2O \rightarrow CO_2 + 6H^+ + 6e^-$

Conversely, in claim 14, e^- is supplied from outside, and due to the above-mentioned reactions, H_2 is generated at cathode (oxidizing electrode), and at the same time, by adjusting the voltage between the fuel electrode and the oxidizing electrode to 300-1000 mV, due to the following reactions, H_2 is generated at anode (fuel electrode) without any relation to e^- supplied from outside.

At cathode, $CH_3OH + H_2O \rightarrow CO_2 + 6H^+ + 6e^-$

At anode, $6H^+ + 6e^- \rightarrow 3H_2$

Therefore, in order to be used as "a hydrogen generating system", providing the "means for collecting hydrogen-containing gas" for anode (fuel electrode), is important as in the present invention of claim 13.

Also, the effect of the present invention of claim 14 is specifically described in column [0226] of the specification of the present application such that

"Relation of the rate of hydrogen evolution with the current density applied in the test is shown in Fig. 43.

It was found that the efficiency of hydrogen evolution (efficiency of hydrogen evolution relative to electric energy supplied) becomes equal to or more than 100% (100% efficiency of hydrogen evolution is represented by the dashed line in Fig. 43) in certain areas when the current density is kept not more than 40 mA/cm². This suggests that it is possible to obtain hydrogen whose energy content is larger than the electric energy supplied from outside by operating the cell in those areas."

As explained above, claims 13 and 14 are not disclosed in or even suggested by Cropley et al.

Also, since claims 58-66, and 68-76 depend from claims 13 or 14, claims 58-66 and 68-76 are not anticipated by Cropley et al., as in claims 13 and 14.

In regard to claims 67 and 77, Quang et al. was further cited to show a carbon dioxide absorbing portion. Claims 67 and 77 depend from claims 13 and 14, which are not disclosed by Cropley et al., as explained above. Since Quang et al. does not rectify the deficiency of Cropley et al., claims 67 and 77 depending from claims 13 and 14 are not obvious from Cropley et al. and Quang et al.

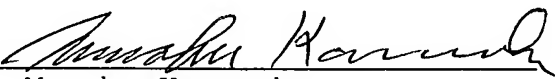
Reconsideration and allowance are earnestly solicited.

One month extension of time is requested. A credit card authorization form in the amount of \$130.00 is attached herewith for one month extension.

Respectfully submitted,

KANESAKA BERNER & PARTNERS

by



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